

- 30 -

CLAIMS

1. A polypeptide of formula (1) :

$X^{1a}-X^{Ar1}-X^{2a}-X^{Ar2a}-X^3$, (SEQ ID NO: 7)

wherein:

5 X^{1a} is an amino terminal or a sequence of from 1 to 4 amino acids;

X^{Ar1} is an aromatic amino acid;

X^{2a} is from two to four amino acids;

X^{Ar2a} is an aromatic amino acid; and

10 X^3a is a carboxy terminal or a sequence of from one to four amino acids.

2. A polypeptide according to claim 1 wherein:

X^{1a} is an amino terminal or a sequence of from 1 to 4 amino acids;

15 X^{Ar1} is F or W;

X^{2a} is from two to four amino acids;

X^{Ar2a} is F or W; and

X^3a is a carboxy terminal or a sequence of from one to four amino acids.

20 3. A polypeptide according to claim 2 wherein:

X^{1a} is an amino terminal or a sequence of from 1 to 4 amino acids, each of which are selected from G, A, I, L, V, S, T, K or R;

X^{Ar1} is F or W;

25 X^{2a} is from two to four amino acids each of which are selected from G, A, I, L, V, S, T, K, R, H or F;

X^{Ar2a} is W; and

30 X^3a is a carboxy terminal or a sequence of from one to four amino acids each of which are selected from G, A, I, L, V, S, T, K, R, H, F or Y.

4. A polypeptide according to claim 3 which is selected from the group:

- 31 -

WXXWXX (SEQ ID NO:8); where each X is independently any amino acid;

WXXWXF (SEQ ID NO:9); where each X is independently any amino acid selected from G, A, I, L, V, S, T, K, R, H, or F;

5 WXXWXFXWX (SEQ ID NO:10); where each X is independently any amino acid selected from G, A, I, L, V, S, T, K, R, H or F;

WXXWHF (SEQ ID NO:11); where each X is independently any amino acid selected from G, A, I, L, V, S, T, or R; and

WVRWHF (SEQ ID NO:2).

10 5. A polypeptide according to claim 1 comprising a sequence selected from the group:

X^{1b}X^{2b}FX^{4b}X^{5b}X^{6b}X^{7b}W (SEQ ID NO:12); where each X^{1b-7b} is independently any amino acid;

15 X^{1b}X^{2b}FX^{4b}X^{5b}X^{6b}X^{7b}W (SEQ ID NO:13); where each X^{1b-7b} is independently any amino acid selected from G, A, I, L, V, S, T, K, R, H, F or Y;

X^{1b}X^{2b}FRX^{5b}X^{6b}X^{7b}W (SEQ ID NO:14); where each X^{1b, 2b} and each of X^{5b-7b} is independently any amino acid selected from G, A, I, L, V, S, T, K, R, H, F or Y;

20 X^{1b}X^{2b}FRX^{5b}X^{6b}X^{7b}W (SEQ ID NO:15); where X^{1b} and X^{2b} are independently selected from the group G, A, I, L, V, S, and T, and each of X^{5b-7b} is independently selected from the group G, A, I, L, V, S, and T.

6. A polypeptide selected from the group:

25 FWLRFT (SEQ ID NO:1);

WVRWHF (SEQ ID NO:2);

WHFIFW (SEQ ID NO:3);

IWLSQLSRGVWVSFP (SEQ ID NO:4); and

GSRILTFRSGSWYAS (SEQ ID NO:5),

30 or a fragment thereof capable of binding to an E2F DNA-binding site.

7. A polypeptide which comprises a variant of a polypeptide according to claim 6, which variant comprises from one to four, preferably from one to three, more preferably one or two, amino acid variations, including substitutions, insertions and deletions.

- 32 -

8. A polypeptide according to any one of the preceding claims which inhibits the binding of an E2F protein to an E2F DNA binding site with an *in vitro* IC₅₀ of less than 100μM.

5 9. A polypeptide which comprises a first portion having the amino acid sequence of a polypeptide defined in any one of claims 1 to 8 and a second portion, attached to the N- or C-terminus of the first portion, which comprises a sequence of amino acids not naturally contiguous to the first portion, said second portion comprising a membrane translocation sequence.

10 10. A composition comprising a polypeptide according to any one of the preceding claims in association with a carrier or diluent.

15 11. A method of inhibiting the growth of a eukaryotic cell which comprises bringing the cell into contact with a polypeptide according to any one of claims 1 to 9, or a composition according to claim 10, under conditions to provide for apoptosis.

12. A method according to claim 11 wherein apoptosis of the cell is induced by said polypeptide.

20 13. A polypeptide according to any one of claims 1 to 9 or a composition according to claim 10 for use in a method of treatment of the human or animal body.